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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/816,944	04/05/2004	Akira Takeda	119219	2415
25944	7590	06/13/2006	EXAMINER	
OLIFF & BERRIDGE, PLC P.O. BOX 19928 ALEXANDRIA, VA 22320			LEVIN, NAUM B	
			ART UNIT	PAPER NUMBER
			2825	

DATE MAILED: 06/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/816,944

Applicant(s)

TAKEDA, AKIRA

Examiner

Naum B. Levin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 05 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

1. This office action is in response to application 10/816,944 filed on 04/05/2004.

Claims 1-6 remain pending in the application.

#### ***Priority***

2. Should applicant desire to obtain the benefit of foreign priority under 35 U.S.C. 119(a)-(d) prior to declaration of an interference, a translation of the foreign application should be submitted under 37 CFR 1.55 in reply to this action.

#### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1- 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Andreev et al. (US Patent 6,182,272).

4. As to claims 1 and 3 Andreev discloses:

(1) A routing method using a CAD tool, comprising the steps of (col.3, ll.39-47):  
defining a routing grid (global routing uses the coarse routing grid illustrated in FIG. 5 – col.6, ll.18-19; Trace routing step 136 (shown in FIG. 3) includes global routing – Fig.4, col.6, ll.2-5) a plurality of times (the steps are described above and shown in FIG. 3 as being entirely sequential, it should be understood that feasibility problems discovered in any one of the steps frequently will require repeating a prior step. For example, compaction problems discovered in step 138 might require adjustments to

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layout by re-executing portions of step 136, thereby defining/adjusting routing grid for global routing many times - col.5, ll.61-67) (col.5, ll.39-67; col.6, ll.1-6; col.6, ll.18-19);

routing a signal line in accordance with a first-defined grid (In the preferred embodiment, a Steiner tree based technique is used to route connections between pins using a coarse routing grid. More preferably, global routing uses the coarse routing grid illustrated in FIG. 5- col.6, ll.15-19) (col.6, ll.1-19); and

routing another signal line in accordance with a second-defined grid (The first segment 1 is a vertical segment and therefore can be implemented on metal layer M1 or metal layer M3/first- defined grid – Fig. 8B, col.9, ll.37-38; segment 2 is a horizontal segment and therefore can be implemented on metal layer M2 or on metal layer M4/ second-defined grid - Fig. 8B, col.9, ll.48-50) (col.8, ll.66-67; col.9, ll.1-11; col.9, ll.30-56);

(3) A routing method using a CAD tool, comprising the steps of (col.3, ll.39-47):

arranging power-supply and ground lines in a mesh pattern in a layout area (In one common layout technique, cells are generally arranged in cell columns, with each cell column bordered by a power rail and a ground rail – col.5, ll.33-35; Bordering each cell column is a power rail 190 and a ground rail 192 – Fig. 5, col.6, ll.25-26), every two lines of the power-supply and ground lines having a space for a line therebetween (The spaces between the cell columns are referred to as channels and are used for wire routing – col.5, ll.35-37; Between cell columns are channels, such as channels 183 and 185 – col.6, ll.23-24) (col.5, ll.33-38; col.6, ll.20-26);

routing a signal line between the power-supply and ground lines (The coarse routing grid includes vertical grid lines 200 and horizontal grid lines 202. As shown in FIG. 5, a vertical grid line 200 runs through the center of each cell column and each channel – col.6, ll.26-29); and

routing another signal line between the power-supply and ground lines or in another part of the layout area (The first segment 1 is a vertical segment and therefore can be implemented on metal layer M1 or metal layer M3/first- defined grid – Fig. 8B, col.9, ll.37-38; segment 2 is a horizontal segment and therefore can be implemented on metal layer M2 or on metal layer M4/ second-defined grid - Fig. 8B, col.9, ll.48-50) (col.8, ll.66-67; col.9, ll.1-11; col.9, ll.30-56).

5. As to claims 2 and 4-6 Andreev recites:

(2) A routing method further comprising the steps of:

arranging power-supply and ground lines in a mesh pattern in a layout area (In one common layout technique, cells are generally arranged in cell columns, with each cell column bordered by a power rail and a ground rail – col.5, ll.33-35; Bordering each cell column is a power rail 190 and a ground rail 192 – Fig. 5, col.6, ll.25-26), every two lines of the power-supply and ground lines having a space for a line therebetween (The spaces between the cell columns are referred to as channels and are used for wire routing – col.5, ll.35-37; Between cell columns are channels, such as channels 183 and 185 – col.6, ll.23-24) (col.5, ll.33-38; col.6, ll.20-26);

routing a signal line between the power-supply and ground lines (The coarse routing grid includes vertical grid lines 200 and horizontal grid lines 202. As shown in

FIG. 5, a vertical grid line 200 runs through the center of each cell column and each channel – col.6, ll.26-29); and

routing another signal line between the power-supply and pound lines or in another part of the layout area (The first segment 1 is a vertical segment and therefore can be implemented on metal layer M1 or metal layer M3/first- defined grid – Fig. 8B, col.9, ll.37-38; segment 2 is a horizontal segment and therefore can be implemented on metal layer M2 or on metal layer M4/ second-defined grid - Fig. 8B, col.9, ll.48-50) (col.8, ll.66-67; col.9, ll.1-11; col.9, ll.30-56);

(4) - (6) A CAD apparatus for designing layout by using the CAD tool (col.3, ll.39-47; col.12, ll.46-61).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Naum B. Levin whose telephone number is 571-272-1898. The examiner can normally be reached on M-F (8:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Chiang can be reached on 571-272-7483. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

N L

*Thuan Do*

TITUAN DO

Primary examiner

06/06/2006